

**Amendments to the Claims:**

Please cancel claims 1-73 and add new claims 74-109. This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1-73 (canceled)

1                   74 (new): A probe for laser desorption/ionization mass spectrometry, wherein  
2 the probe comprises at least one sample presenting surface and a moiety that binds to biotin  
3 immobilized by chemical bonding to the sample presenting surface.

1                   75 (new): The probe of claim 74, wherein the moiety binds biotin with an  
2 affinity constant of  $K_a = 10^{15} \text{ M}^{-1}$ .

1                   76 (new): The probe of claim 74, wherein the moiety on the sample presenting  
2 surface is bound to the biotin group of at least one biotinylated protein.

1                   77 (new): The probe of claim 76, wherein the probe further comprises a matrix.

1                   78 (new): The probe of claim 74, wherein the sample presenting surface  
2 comprises two or more moieties that bind to biotin arranged in a predetermined array.

1                   79 (new): The probe of claim 74, wherein the moiety that binds to biotin is  
2 selected from the group consisting of streptavidin and avidin.

1                   80 (new): The probe of claim 74, wherein the moiety is covalently bonded to the  
2 sample presenting surface.

1           81 (new): A method comprising the steps of:

- 2           a) providing a probe comprising at least one sample presenting surface and a  
3 moiety that binds to biotin immobilized by chemical bonding to the sample presenting surface;  
4           b) contacting the probe with at least one biotinylated protein under conditions  
5 allowing the biotin group to bind to the moiety that binds to biotin; and  
6           c) performing laser desorption/ionization mass spectrometry on the proteins  
7 bound on the surface of the probe.

1           82 (new): The method of claim 81, further comprising after step b) the step of:  
2 washing to remove unbound molecules from the probe.

1           83 (new): The method of claim 81, wherein the moiety binds biotin with an  
2 affinity constant of  $K_a = 10^{15} \text{ M}^{-1}$ .

1           84 (new): The method of claim 81, wherein the probe comprises two or more  
2 moieties that bind to biotin arranged in a predetermined array.

1           85 (new): The method of any one of claims 81-84, wherein the moiety is  
2 covalently bonded to the sample presenting surface.

1           86 (new): The method of any one of claims 81-84, further comprising the step of  
2 applying a matrix after allowing the biotin group to bind to the moiety that binds to biotin.

1           87 (new): The method of any one of claims 81 or 82, wherein the moiety that  
2 binds to biotin is selected from the group consisting of streptavidin and avidin.

1           88 (new): The method of claim 87, wherein the moiety is covalently bonded to  
2 the sample presenting surface.

1           89 (new): The method of claim 87, further comprising the step of applying a  
2 matrix after allowing the biotin group to bind to the moiety that binds to biotin.

1                   90 (new): A mass spectrometry apparatus comprising:  
2                   a) a probe comprising at least one sample presenting surface and a moiety that  
3 binds to biotin immobilized by chemical bonding to the sample presenting surface;  
4                   b) an energy source that directs laser energy to the sample presenting surface for  
5 desorbing and ionizing a biotinylated protein captured by the moiety; and  
6                   c) a detector that detects the desorbed, ionized biotinylated protein.

1                   91 (new): The apparatus of claim 90, further comprising:  
2                   d) a spectrometer tube into which ionized biotinylated protein is accelerated; and  
3                   e) means for applying an accelerating electrical potential to the desorbed, ionized  
4 protein; wherein the mass spectrometer is a time-of-flight mass spectrometer.

1                   92 (new): The apparatus of claim 91, further comprising:  
2                   f) vacuum means for applying a vacuum to the interior of the tube.

1                   93 (new): The apparatus of claim 90, wherein the detector comprises an electron  
2 multiplier.

1                   94 (new): The apparatus of claim 90, wherein the moiety binds biotin with an  
2 affinity constant of  $K_a = 10^{15} \text{ M}^{-1}$ .

1                   95 (new): The apparatus of claim 90, wherein the moiety on the probe is bound  
2 to the biotin group of at least one biotinylated protein.

1                   96 (new): The apparatus of claim 95, wherein the probe further comprises a  
2 matrix.

1                   97 (new): The apparatus of claim 90, wherein the probe comprises two or more  
2 moieties that bind to biotin arranged in a predetermined array.

1                   98 (new): The apparatus of claim 90, wherein the moiety that binds to biotin is  
2 selected from the group consisting of streptavidin and avidin.

1                   99 (new): The apparatus of claim 91, wherein the moiety that binds to biotin is  
2 selected from the group consisting of streptavidin and avidin.

1                   100 (new): The apparatus of claim 92, wherein the moiety that binds to biotin is  
2 selected from the group consisting of streptavidin and avidin.

1                   101 (new): The apparatus of claim 93, wherein the moiety that binds to biotin is  
2 selected from the group consisting of streptavidin and avidin.

1                   102 (new): The apparatus of claim 90, wherein the moiety is covalently bonded  
2 to the sample presenting surface.

1                   103 (new): The apparatus of claim 95, wherein the moiety is covalently bonded  
2 to the sample presenting surface.

1                   104 (new): The apparatus of claim 96, wherein the moiety is covalently bonded  
2 to the sample presenting surface.

1                   105 (new): The apparatus of claim 98, wherein the moiety is covalently bonded  
2 to the sample presenting surface.

1                   106 (new): The apparatus of claim 99, wherein the moiety is covalently bonded  
2 to the sample presenting surface.

1                   107 (new): The apparatus of claim 100, wherein the moiety is covalently bonded  
2 to the sample presenting surface.

1                   108 (new): The apparatus of claim 101, wherein the moiety is covalently bonded  
2 to the sample presenting surface.

1                   109 (new): The apparatus of claim 90, wherein the energy source is energy from  
2 a nitrogen laser or an Nd-YAG laser.